

National Elk Refuge

Elk Biology



design and behavior improves their odds of survival.

Fun Facts

- Wapiti is the Shawnee name for elk meaning “white rump”
- A bull averages 600 pounds in the winter and 700 pounds in the summer.
- Calves weigh 30-35 pounds at birth and weigh 250 pounds by its first winter.
- Elk eat about 20 pounds of grass per day. They eat about half as much during winter because of less available food supplies. (They eat the cereal during the summer and the cereal box during the winter).
- Elk are ruminants and have four stomachs. This means that they chew their cud.



Young calf on wobbly legs

Today, the National Elk Refuge is 24,700 acres and supports 5,000-8,000 wintering elk and provides habitat and food for animals like bison, wolves, coyotes, bighorn sheep and several species of migratory birds. The goal of the National Elk Refuge is to protect and promote natural habitat for wildlife and future generations or people.

For more information contact:

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July 2008

calves. In winter they group in bachelor herds and in the summer bull elk solo into the high country.

Herald of the Kingdom Elk exhibit a range of sounds to both warn of predators and communicate with one another making bugling important to the social makeup of the elk herd. Cows and calves will “chirp” or “mew” back and forth when the herd is moving, feeding, or regrouping. As the sun dips behind the mountains and the aspen leaves are on fire with beautiful shades of yellow, the resounding bugle of the bull elk is heard. These natural trumpets herald both fall in Jackson Hole and the elk mating season. Bulls “bark” or “bugle” to entice cows and challenge other bulls.



War of the Bulls The clashing of antlers in the fainting light and the fierce sound of a warrior after victory are signs of an elk’s heroic stand for love. The mating season or rut is from late August to October peaking in September. The rut is the most exciting time to observe spectacles of dominance, heroism, and amore. An elk bugle blares in the distance. A mighty bull steps onto the field, releases a high and boisterous call encouraging his harem to follow. During this time bulls have a dramatic increase in testosterone causing their necks to swell. The bull exhibits aggressive behavior and advertises his dominance. Bulls will bugle, wallow, urinate on themselves, rub and

Elk sparing.



destroy vegetation. The mature bulls dominate and attract more females to the harem, an arrangement of 2 to 30 females. The bull will mate with each female

and will defend his harem until winter migration. A bull’s survival through winter can be jeopardized by numerous arduous mating quests. He may pass on his genes to a new generation but lose up to 30 percent of his body weight or 150 pounds. This sends the bull elk into winter in a starved state making him susceptible to disease and death.

Winter: Desperate Times

Winter encroaches on elk summer habitat leaving behind a dense blanket of ice and snow. Elk face struggles much like humans, but cannot escape these harsh winter months. Elk must resist these winter. Winter means change. Change in the environment and change in the elk. Humans layer clothing to protect them from the elements elk do the same. As winter approaches elk develop a two layer coat. The first layer, downy hair lies close to the skin and a thicker Second coat made of hollow guard hair. With this insulated layer elk trap heat and fight off cold air and wind. Another survival factor is food which is essential but scarce. Grasses and forbes growing under freshly fallen snow are a viable source of food in early winter, but the struggle for food increases as winter deepens. Supplemental feeding by the National Elk Refuge and the Wyoming Game & Fish Department is one human

Photo by Mark Gocke



Elk rest more in the winter to conserve energy.

answer to their survival and discussed in other leaflets. An elk’s body is designed to conserve energy by decreasing the amount of food needed to survive. Elk are able to prevent heat loss by lying on their legs and congregating in herds. Winter mortality is higher than any other season and may bring an unfortunate end to some of these majestic ungulates. However, elk body

A Mighty Herd

Elk have roamed North America for thousands of years from tundra to wetland. Elk have also been driven from nearly all places they once inhabited. Today, the Jackson Hole elk herd is one of the last vestiges of a large wildlife herd numbering approximately 12,000. The National Elk Refuge has conserved habitat for this herd since 1912.



Jackson Hole elk migrating.

Jackson Hole elk have historically wintered in and migrated through the town of Jackson. As Jackson grew around the turn of the twentieth century, the elk population was negatively affected. Natural migratory routes were cut off and natural grasses were used by ranchers to feed livestock. These changes and a series of harsh winters led to the starvation of thousands of elk. Along with starvation, ranchers killed elk feeding from their hay storages.

By 1912 the community of Jackson knew the elk herd would not survive without human intervention. Citizens appealed to the federal government for help. Some land was purchased from homesteaders and the National Elk Refuge was established. Because of the lack of acreage and the loss of winter habitat supplemental feeding began when the refuge was established.

King of the Ungulates

Amid human development and harsh environmental conditions elk continue to be a tenacious and critical part of this ecosystem. Their regal antlers, complex social behavior, and majestic stature make them one of the icons of Jackson Hole and the wild.

Royal Lineage

Second only to moose in size, these members of the deer family (cervidae) have a bloodline befitting kings. Their lineage originated some two million years ago in Eurasia. These prehistoric elk migrated to North America around 10,000 years ago. Records suggest prehistoric elk displayed ivory tusks protruding from their upper jaw. Elk today, like their ancestor, have remnant tusks which are much shorter and colorful. Ivories are evident in both male and female elk. These ivories are prized as natural jewels and adorn western jewelry. Ivory hunting originally created peril for these ungulate kings. In Jackson Hole, market hunters killed elk solely to extract ivories which led to the first poaching laws in Jackson Hole.

Headdress

On a crisp fall morning, as fog parts for the sun, a bull elk emerges from the pines led by his mighty headdress, massive antlers. A string of five cows emerges behind him. His headdress helps insure his genetic survival by attracting females and acts as a weapon against challengers. The fourth tine on an antler is even called the sword tine.

As fall turns to winter and winter to spring, the bull elk will shed his antlers to begin a new cycle. Like leaves falling in the autumn to be renewed in spring, bull elk share the same process. Once the antler has dropped, a scab will form and the new dual crown will begin to reach upward at a remarkable pace.

Bull elk in velvet.



The intricate and sharp lattice of elk antlers are some of the most striking natural materials.



Group of shed antlers

Mature bulls can grow a set of antlers in as little as 140 days; smaller bulls, such as a spike, will grow antlers in 90 days. Growing antlers are covered in a rich blood supply and nerves called velvet.

Velvet transports nutrients to the growing antler. Once the antler matures, the velvet dies and the sensitive antler hardens to bone. To the inquisitive eye, antlers vary widely in size, shape, and color. Size

and shape depend on available nutrients, genetics and to a certain extent age. Antlers acquire color by rubbing against trees and shrubs. The darker shaded antlers are stained by trees with resin or sap like pines, firs, or spruce. The lighter shaded antlers are polished on light colored bark like cottonwoods or aspens.

If a person breaks a bone, often the healing process leaves scarring; and if a person loses a bone it cannot be replaced. If antlers did not grow each year, seasonal damage could end a bull's bloodline. Luckily, elk are only affected for one season by damaged or broken antlers. During antler growth, injury to tender velvet can cause abnormal formation. During the mating season a bull can also break off an antler making him less fit for battle and less attractive to cows.

Just like fingerprints, no two bull elk have identical antlers. Bulls will grow a similar pattern over a lifetime, but the antlers will still vary in length and girth. Just as kings pass on crowns to their sons, bull elk

pass on similar antler patterns to offspring. The natural crown passed from generation to generation helps insure the propagation of more fit royalty.

These natural crowns are often prized by human “horn” hunters. Antler collectors create art, furniture, and other valuable products. The town square in Jackson Hole is framed by four elk antler arches.

To minimize disturbance to elk in winter range and allow some antlers to be returned to the ecosystem as a source of calcium, it is illegal to collect antlers in National Parks or on the National Elk Refuge.

Climbing the Social Ladder

Elk viewing is more than meets the eye because they weave a complicated social story. Elk are the most gregarious hoofed mammals in the area. Because of herding behavior communication is apparent in all parts of the elk herd. To express dominance an elk may lower



Cow elk with ears back.

her head and flatten her ears. Two cows may also stand on their back legs and box to determine dominance. Bulls battle with their antlers or box.

Just like your mother taught you to look both ways before you cross the street, cow elk are the architects of elk life. They lead herds on learned migration routes as well as stand as sentinels against danger. An elk herd of 30-1,000 will follow a lead cow to winter habitat like the National Elk Refuge and in the spring return to the same calving grounds their mothers visited. After the rut and migration, males segregate themselves from cows and